ELSEVIER
Theoretical Computer Science 157 (1996) 1
Theoretical Computer Science

Preface

This issue of *Theoretical Computer Science* contains papers presented at the Workshop *Algorithmic Complexity of Algebraic and Geometric Models*, hold on 6–7 June, 1994 at the University Paris-12. The main topics discussed at the Workshop concerned the complexity of algorithmic problems related to geometry and algebra, and the implicit basic theme was the problem of recognizing connectivity or constructing a path in various environments. If considered in a geometric setting this problem involves different aspects of geometry, in particular Riemannian and sub-Riemannian geometry on the one hand, and discrete combinatorial geometry on the other hand. And between these two extremities one finds more or less traditional fields of computer algebra. Computations in geometry essentially use differential equations, and for this reason algorithmic aspects of differential algebra were presented at the Workshop. The latter subjects are now at an initial state of complexity analysis. More developed, though not from the point of view of complexity, is the algorithmics of sub-Riemannian geometry related to non-holonomic motion planning that was also discussed. Traditional questions of computer algebra (such as quantifier elimination for the theory of real closed fields) constituted a considerable part of the talks, but not all of them are included in this collection as the material is to be published in other places.

A. SLISSENKO
Guest Editor

SSDI 0304-3975(95)00172-7